REMARKS

The Applicants have carefully distinguished what is denoted as "substrate-incident" optical disks from the disclosed "first-surface" optical disks on, for example, page 10, lines 9 through 25. In a substrate-incident disk, there are two "substrates." To form such a disk a first substrate (typically polycarbonate) is stamped with the appropriate features (bumps for data in a ROM disk or grooves if the disk is writeable). After an information layer is formed on the stamped substrate, the information layer is covered with a second layer of polycarbonate (the second substrate). An incident laser beam must thus pass through the overlaying polycarbonate layer (the second substrate) before impinging on the information layer.

This overlaying substrate is quite useful in that it allows a consumer to handle DVDs and CDs without adversing affecting readability. The resulting fingerprints and dust on the surface of the overlaying substrate is defocused with regard to the underlying information layer. However, this overlaying substrate introduces considerable aberration and other undesirable effects that limit the achievable data density. Thus, the Applicants have provided a "first-surface" disk in which there is no overlaying polycarbonate layer on the information layer. Instead, the information layer is merely covered with a silicon oxynitride layer. This layer is quite thin, such as just 60 nm. Thus, none of the aberrations of second-surface disks occur such that a much higher data density is achievable.

Applicants plainly show in Figures 1 and 2 that no other layers cover the silicon oxynitride layers (element 16 of Figure 1, and elements 56a and 56b of Figure 2). Moreover, Applicants make this clear on page 10, lines 10 through 13 by stating that the laser light "first passes through the dielectric layer (e.g., 56a or 56b) and then writes to or reads from the phase-change metal/alloy layer (e.g., 54a or 54b) without first passing through the substrate." By the term "substrate," Applicants are not referring to the substrate underlying the

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information layer – light does not pass through that underlying substrate in substrate-incident disks either. Instead, Applicants are referring to the missing substrate that would typically cover the dielectric layer in conventional disks such as DVDs so that the laser light would then be "substrate-incident."

Accordingly, Applicants have written support to limit claim 1 so that "no further layers overlay the first silicon oxynitride layer." In that regard, Applicants note that MPEP § 2163.07(a) makes it plain that if a property (no additional layers) is inherently disclosed, that property may be explicitly claimed even though the specification "says nothing explicit concerning it." Here, the inherent support is abundant: For example, Figures 1 and 2 show the absence of additional layers. Also, on page 10, line 10, Applicants describe that the laser beam "first passes through the dielectric layer." This cannot be the structure through which the light first passes if there are overlying layers.

The prior art cited by the examiner are all "substrate-incident" in that the information layer and dielectric layer are covered by an additional layer (the polycarbonate coversheet or substrate). With regard to the assertion that "Uno et al. '690 teaches the equivalence of the use of SiON and other dielectrics in protective layers and the use of these materials to adjust the optical characteristics of the recording medium," Applicants note that they have specifically noted on page 8, lines 8 through 26, the distinct advantages they have discovered with regard to the use of silicon oxynitride to form the claimed dielectric layer: In particular, Applicants note that "the use of SiO_x may result in a dielectric layer having a real part of refractive index that varies unacceptably." Accordingly, the Uno reference teaches away from Applicants' discovery: that silicon oxynitride and silicon oxide are not interchangeable and that silicon oxynitride leads to advantageous optimization of the optical contrast. In that regard, Applicants note that they were correct in their response of 2/17/06 that a phase-change metal/alloy layer does not need a protective layer – yes, an oxide layer forms in reaction with

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the silicon oxynitride but the disk would function without this layer. Instead, note what applicants have invented and claimed: that by adjusting the index of refraction and the thickness of the silicon oxynitride layer, the optical contrast is optimized. Thus, the silicon oxynitride layer functions as an optical coupling layer and not as a protective layer – the disk would be fine without it, just would have poor contrast. It is much more desirable to enhance the optical contrast using an appropriate layer of silicon oxynitride; this is what Applicants have discovered and claimed.

Moreover, the Handa reference does nothing to cure the infirmities of the other cited art in that Handa is abundantly directed to a "substrate-incident" disk – as seen in the cover figure of Handa (repeated as Figure 1), the position of reflective layer 6 above the recording layer 4 indicates that the laser beam must travel through the substrate 2 to reach the recording layer.

The remaining cited prior art adds nothing further. In particular, Applicants note the 5/01/06 office action is entirely silent regarding the index of refraction limitation. No citation to any reference was provided for the Applicants to address. Applicants respectfully note they thus cannot rebut the assertion that the claim is obvious other than by replying that the cited prior art provides no teaching or suggestion for such a limitation. Moreover, this lack of citation was curious in that the Examiner has stressed (in **bold** on section 3 of the office action that "the optimization of both the index of refraction and the thickness to maximize contrast seems to yield particularly advantageous results. The applicant may wish to include these limitations in the claims." Here, Applicants have amended as helpfully suggested by the Examiner (the Applicants gratefully acknowledge the Examiner's thoughtful suggestion). Despite doing just as recommended by the Examiner, the Applicants claims were again rejected over the prior art without proper justification.

Accordingly, claim 1 and its dependent claims are allowable over the cited prior art.

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Claim 13 has been amended analogously as discussed with regard to claim such that claim 13 and its dependent claims are allowable over the cited prior art for analogous reasons.

CONCLUSION

For the above reasons, pending Claims 1-20 are in condition for allowance and allowance of the application is hereby solicited. If the Examiner has any questions or concerns, a telephone call to the undersigned at (949) 752-7040 is welcomed and encouraged.

I hereby certify that this correspondence is facsimile transmitted to the Commissioner for Patents, Alexandria, VA 22313-1450, at 571-273-8300, on September 1, 2006.

Jonathan Hallman — September 1, 2006 Date of Signature

Respectfully submitted,

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